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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,699	02/05/2004	Leroy M. Edwards	8540G-000156	5123
27572 7590 03/04/2008 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303				
EXAMINER				
WALKER, KEITH D				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
03/04/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/772,699

Applicant(s)

EDWARDS ET AL.

Examiner

KEITH WALKER

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/6/07 has been entered.

Response to Amendment

Claims 1-20 are pending examination as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 4-9, 11-16, 19 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,013,385 (DuBose) in view of US 2004/0062964 (Matsuoka).

DuBose teaches a fuel cell system with a coolant reservoir having a hydrogen vent in the wall of the enclosure. The vent separates the fuel cell exhaust gases from the liquid water, allowing the unnecessary gasses to pass through to the atmosphere

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but keeping the liquid coolant inside the reservoir (Fig. 3; Abstract, 8:5-20, 9:35-60).

The vent keeps the fuel cell system operating safely by eliminating the accumulation of hydrogen gas in the reservoir.

DuBose is silent to an enclosure encompassing a part of the coolant flow path.

Matsuoka teaches a fuel cell system with an enclosure surrounding the entire fuel cell system. This enclosure houses the entire system, allowing for easy application integration (Figs. 1-5A; [0030, 0031, 0034, 0037 & 0040]). While the concentration of the hydrogen within the enclosure is not expressly taught, reducing the amount of unnecessary gasses like hydrogen is taught and it would be obvious to one skilled in the art to rid the enclosure of as much hydrogen gas as possible with a best case being zero percent. The motivation to reduce the hydrogen gas in the container is for both safety and increased performance.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of DuBose with the enclosure of Matsuoka to allow for easy application integration.

2. Claims 10 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,013,385 (DuBose) in view of US 2004/0062964 (Matsuoka) as applied to claims 1 & 16 respectively and further in view of US Patent 4,168,349 (Buzzelli).

The teachings of DuBose and Matsuoka as discussed above are incorporated herein.

DuBose and Matsuoka are silent to the vent acting like a flame barrier.

Buzzelli teaches a hydrogen vent that acts as a flame and explosion barrier (2:55-65). Using a hydrogen vent that also blocks flames increases the safety of the fuel cell system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the vent of Matsuoka with the flame barrier vent of Buzzelli to improve the safety of the fuel cell device.

3. Claims 3 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,013,385 (DuBose) in view of US 2004/0062964 (Matsuoka) and US Patent 4,168,349 (Buzzelli) as applied to claims 2 & 17 respectively and further in view of US Publication 2004/0151962 (Adams).

The teachings of DuBose, Matsuoka and Buzzelli as discussed above are incorporated herein.

DuBose, Matsuoka and Buzzelli are silent to the vent being made of plastic.

Adams teaches a gas permeable and liquid impermeable vent made from plastic (Fig. 6, [0056]). Adams discloses different materials available to construct vents.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the teachings of Adams to learn of the materials available for gas permeable and liquid impermeable vents.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

/PATRICK RYAN/

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Supervisory Patent Examiner, Art Unit 1795